

10/080839
STN Search Summary

FILE 'REGISTRY' ENTERED AT 15:16:33 ON 20 APR 2004

L3 4 S 6.1.1.2

FILE 'CAPLUS' ENTERED AT 15:17:39 ON 20 APR 2004

L4 451 S 9023-44-3/RN
L5 2085 S TRYPTOPHAN? (3W) (LIGASE OR SYNTHETASE OR SYNTHASE)
L6 2120 S L4 OR L5
L7 145 S L6 (P) HUMAN
L8 9 S L7 (P) TRUNCAT?
L9 4 S L7 AND ELASTASE
L10 1 S L9 NOT L8
L11 17 S L6 (P) TRUNCAT?
L12 8 S L11 NOT L8
L13 0 S L12 AND ELASTASE
L14 181 S L6 (P) (TRUNCAT? OR FRAGMENT?)
L15 181 S L6 (30W) (TRUNCAT? OR FRAGMENT?)
L16 181 S (TRUNCAT? OR FRAGMENT?) (P) (L4 OR L5)
L17 172 S TRYPTOPHAN (P) (LIGASE OR SYNTHETASE OR SYNTHASE) (P) (TRUNCA
L18 6 S L17 AND L4
L19 195 S TRYPTOPHAN (P) (LIGASE OR SYNTHETASE OR SYNTHASE) (P) (TRUNCA
L20 8 S L19 AND L4
L21 0 S L18 NOT L20
L22 2 S L20 NOT L18

L3 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN

RN 9023-44-3 REGISTRY

CN Synthetase, tryptophanyl-transfer ribonucleate (9CI) (CA INDEX NAME)

OTHER NAMES:

CN E.C. 6.1.1.2

CN Tryptophan transase

CN Tryptophan-tRNA synthetase

CN Tryptophanyl ribonucleic synthetase

CN Tryptophanyl-transfer ribonucleate synthetase

CN Tryptophanyl-transfer ribonucleic acid synthetase

CN Tryptophanyl-transfer ribonucleic synthetase

CN Tryptophanyl-transfer RNA synthetase

CN Tryptophanyl-tRNA synthase

CN Tryptophanyl-tRNA synthetase

LC STN Files: AGRICOLA, BIOSIS, BIOTECHNO, CA, CAPLUS, EMBASE, TOXCENTER,
USPATFULL

L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:757728 CAPLUS

TI Human diabetes-mediating proteins with altered expression levels
in islet of Langerhans cells exposed to cytokines, and uses for diagnosis,
treatment and prevention of diabetes

IN Larsen, Peter Mose; Fey, Stephen J.; Nerup, Jorn; Karlsen, Allan E.

SO PCT Int. Appl., 60 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2003078456	A2	20030925	WO 2003-DK190	20030320
	WO 2003078456	A3	20040115		
PRAI	DK 2002-431	A	20020320		

L8 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:153107 CAPLUS
TI Crystal Structure of Human Tryptophanyl-tRNA
Synthetase Catalytic Fragment: Insights into Substrate
Recognition, tRNA Binding, and Angiogenesis Activity
AU Yu, Yadong; Liu, Yunqing; Shen, Ning; Xu, Xiang; Xu, Feng; Jia, Jie; Jin,
Youxin; Arnold, Eddy; Ding, Jianping
SO Journal of Biological Chemistry (2004), 279(9), 8378-8388

L8 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:106958 CAPLUS
TI A short peptide insertion crucial for angiostatic activity of
human tryptophanyl-tRNA synthetase
AU Kise, Yoshiaki; Lee, Sang Won; Park, Sang Gyu; Fukai, Shuya; Sengoku,
Toru; Ishii, Ryohei; Yokoyama, Shigeyuki; Kim, Sunghoon; Nureki, Osamu
SO Nature Structural & Molecular Biology (2004) 11(2), 149-156

L8 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:992946 CAPLUS
TI Biologically active fragment of a human tRNA synthetase inhibits
fluid shear stress-activated responses of endothelial cells
AU Tzima, E.; Reader, J. S.; Irani-Tehrani, M.; Ewalt, K. L.; Schwartz, M.
A.; Schimmel, P.
SO Proceedings of the National Academy of Sciences of the United States of
America (2003), 100(25), 14903-14907

L8 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:928137 CAPLUS
TI Protein and cDNA sequences of a human tryptophanyl
-tRNA synthetase and therapeutic uses for the regulation of
angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke
PATENT NO. KIND DATE APPLICATION NO. DATE

PI US 2002182666 A1 20021205 US 2001-813718 20010321
PRAI US 2001-813718 20010321

L8 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:675861 CAPLUS
TI Truncated human tryptophanyl-tRNA
synthetase (Trp-RS) and therapeutic uses thereof for the
regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke; Friedlander, Martin
SO PCT Int. Appl., 83 pp.
PATENT NO. KIND DATE APPLICATION NO. DATE

PI WO 2002067970 A1 20020906 WO 2002-US5185 20020222
US 2003017564 A1 20030123 US 2002-80839 20020222
EP 1377305 A1 20040107 EP 2002-802957 20020222
PRAI US 2001-270951P P 20010223
WO 2002-US5185 W 20020222

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L8 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:747979 CAPLUS
TI Preparation and characterization of truncated human
tryptophanyl-tRNA synthetase useful for the regulation
of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke
SO PCT Int. Appl., 149 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001075078	A1	20011011	WO 2001-US8975	20010321
	EP 1274834	A1	20030115	EP 2001-918876	20010321
	JP 2004500121	T2	20040108	JP 2001-572952	20010321
	US 2004009163	A1	20040115	US 2002-240532	20020930
PRAI	US 2000-193471P	P	20000331		
	WO 2001-US8975	W	20010321		

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L8 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:747812 CAPLUS
TI Preparation and characterization of truncated human
tyrosyl-tRNA synthetase useful for the regulation of angiogenesis
IN Schimmel, Paul; Wakasugi, Keisuke
SO PCT Int. Appl., 150 pp.

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001074841	A1	20011011	WO 2001-US8966	20010321
	EP 1272506	A1	20030108	EP 2001-924232	20010321
	JP 2003529354	T2	20031007	JP 2001-572530	20010321
PRAI	US 2000-193471P	P	20000331		
	WO 2001-US8966	W	20010321		

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L12 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:514722 CAPLUS
TI Protein kinase activity tightly associated with bovine
tryptophanyl-tRNA synthetase
AU Elizarov, S. M.; Zabazarnykh, M. Yu.; Musolyamov, A. Kh.; Kovaleva, G. K.;
Egorov, Ts. A.; Kiselev, L. L.
SO Molecular Biology (Translation of Molekulyarnaya Biologiya (Moscow))
(1997), 31(2), 210-218

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L12 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:211421 CAPLUS
TI Importance of conserved and variable C-terminal residues for the activity
and thermal stability of the .beta. subunit of tryptophan
synthase
AU Yang, Li-Hong; Ahmed, S. Ashraf; Rhee, Sangkee; Miles, Edith Wilson
SO Journal of Biological Chemistry (1997), 272(12), 7859-7866

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L18 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:2291 CAPLUS
TI The effect of tRNA and tryptophanyl adenylate on limited proteolysis of
beef pancreas tryptophanyl-tRNA synthetase
AU Sheinker, V. Sh.; Beresten, S. F.; Degtyarev, S. Kh.; Kiselev, L. L.
SO Nucleic Acids Research (1979), 7(3), 625-37
AB Limited proteolysis of tryptophanyl-tRNA synthetase (I) was used
to detect changes in I in the presence of substrates. Trypsinolysis of
each of the 2 identical subunits occurred in succession from the

N-terminus as follows: 60.fwdarw.51.fwdarw.40.fwdarw.24 kilodaltons. The transition 51.fwdarw.40 was hindered in the tryptophanyl adenylate-I complex. Yeast tryptophan-specific tRNA (tRNA^{Trp}) accelerated the 1st steps of hydrolysis and decelerated the transition 40.fwdarw.24. Once tRNA^{Trp} was added to the I-adenylate complex, the protective effect of the adenylate disappeared. The same effects were found also in the presence of tRNA^{Trp} oxidized with NaIO₄ and tRNA^{Trp} lacking the 3'-terminal adenosine. Oxidized tRNA^{Trp} (but not tRNA^{Trp} without the 3'-adenosine) accelerated tryptophan-dependent hydrolysis of ATP catalyzed by I. A scheme is proposed for the interaction of yeast tRNA^{Trp} with beef pancreas I involving the assocn. of tRNA with a pos. charged site(s) of I and the changes in the conformation of I manifested by unfolding of the acidic N-terminal fragment of the polypeptide chain and in the exposure of the adenylate.

L18 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1979:489338 CAPLUS

TI Immunochemical studies of beef pancreas tryptophanyl-tRNA synthetase and its fragments. Determination of the number of antigenic determinants and a comparison with tryptophanyl-tRNA synthetases from other sources and with reverse transcriptase from avian myeloblastosis virus

AU Scheinker, V. Sh.; Beresten, S. F.; Mazo, A. M.; Ambartsumyan, N. S.; Rokhlin, O. V.; Favorova, O. O.; Kiselev, L. L.

SO European Journal of Biochemistry (1979), 97(2), 529-40

AB The IgG fraction of the antiserum from rabbits immunized with homogeneous beef pancreas tryptophanyl-tRNA synthetase (I) inhibits the enzyme activity in the reactions of both tRNA^{Trp} aminoacylation and tryptophan activation. Fab fragments of IgG act in a similar way. Common antigenic determinants were detected in I from beef, pig, chicken, and rat livers using pure antibodies against beef pancreas I. This observation indicates the evolutionary stability of certain structural features of I. The interaction of antibodies with the fragments of beef I produced by endogenous and tryptic proteolysis of the enzyme was studied. One third of the antiserum antibodies interacting with the C-terminal fragment of I (mol. wt. .apprx.40,000) inhibits its activity, whereas the antibodies to the N-terminal fragment (mol. wt. .apprx.20,000) have no effect on the enzyme activity. The immunochem. identity of the 2 I fragments, differing in their enzymic activity supports the assumption that the loss of enzymic activity of the tryptic fragment is caused by lack of a small peptide which is retained in case of endogenous proteolysis; probably the amino acid residues of this peptide participate in formation of active site of I. A radioimmunochem. method is described for detg. the no. of antigenic determinants. One mol. of I bound 9 mols. of Fab fragments. Antibodies against I from beef pancreas do not noticeably inhibit the activity of reverse transcriptase from avian myeloblastosis virus. No antigenic determinants in common were detected in reverse transcriptase and I by radioimmunochem. assays.

L18 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1979:70388 CAPLUS

TI Immunochemical properties of tryptophanyl-tRNA synthetase and its fragments

AU Beresten, S. F.; Sheinker, V. Sh.; Rokhlin, O. V.

SO Molekulyarnaya Biologiya (Moscow) (1978), 12(6), 1408-19

LA Russian

AB The interaction between beef pancreas tryptophanyl-tRNA synthetase and its fragments produced after limited proteolysis with the IgG fraction of antiserum and with the Fab fragment of IgG was studied. Both the intact antibodies and Fab fragments inhibit the enzyme activity in tRNA aminoacylation and tryptophan-dependent ATP-32P-pyrophosphate exchange reactions. However, the enzyme inhibited by antibodies is still able to form a complex with tryptophanyl-tRNA. The enzymically active fragment obtained after endogenous proteolysis interacts only with 33% of the antibodies against native enzyme. The fragment produced by trypsinolysis possesses similar immunochem. properties. This fragment has almost the same mol. wt. but is enzymically inactive. Pure antibodies against tryptic fragment isolated by means of a specific immunoabsorbent inhibit the enzymic activity. The antibodies which do not interact with this fragment (67% of the total amt. of antibodies) have no influence on the activity. The immunochem. identity of the 2 synthetase fragments differing in their enzymic activity supports the assumption that the loss of activity of the tryptic fragment is caused by lack of a small peptide which is retained in case of endogeneous proteolysis. Probably, the amino acid residues of this peptide participate in formation of the active center of tryptophanyl-tRNA synthetase. A new procedure for detn. of the no. of antigenic determinants in proteins is developed. It is shown by this method that beef pancreas tryptophanyl-tRNA synthetase contains 9. \pm .1 antigenic determinants.

L18 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1976:70981 CAPLUS
TI Limited proteolysis of tryptophanyl-tRNA synthetase from beef pancreas
AU Epely, Sylvie; Gros, Claude; Labouesse, Julie; Lemaire, Genevieve
SO European Journal of Biochemistry (1976), 61(1), 139-46
AB Treatment of purified tryptophanyl-tRNA synthetase with either chymotrypsin, papain, subtilisin, or elastase converts all the enzyme into a high-mol.-wt. intermediate. This protease-resistant core mol. has the same dimeric structure as the native protein and possesses the ability to bind substrates (tryptophan, ATP, and tryptophan-specific tRNA) but is catalytically inactive. The monomer mol. wt. of the protease-treated enzyme is 39,000 compared to 54,000 for the intact mol. Chem. studies indicate that proteases excise the N-terminal part of the polypeptide chain. It has been demonstrated previously that removal of a 13,000 dalton fragment from the N-terminal region of the tryptophanyl-tRNA synthetase converts the native enzyme to another active form. Cleavage of 20 addnl. amino acids produces the inactive protease-resistant core.

L18 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1975:94791 CAPLUS
TI Limited proteolysis of the tryptophanyl-tRNA synthetase
AU Prasolov, V. S.; Favorova, O. O.; Margulis, G. V.; Kiselev, L. L.
SO Biochimica et Biophysica Acta (1975), 378(1), 92-106
AB Earlier studies showed that native tryptophanyl-tRNA synthetase from beef pancreas is composed of 2 apparently identical subunits having a mol. wt. of 60,000 \pm . 2000 each. Incubation of the purified enzyme with trypsin under restrictive conditions results in splitting of each subunit to form an enzymically inactive polypeptide chain of mol. wt. 24,500 \pm . 1500. During proteolysis, 2 distinct intermediate forms of mol. wt. 51,000 \pm . 2000 and 40,000 \pm . 2000 and fragments of mol. wt.

14,000 \pm 2500 are formed. The presence of substrates, viz. ATP, tryptophan, or tryptophanyl adenylate, decreases the rate of proteolysis. However, a band pattern monitored by acrylamide gel electrophoresis is qual. indistinguishable from that obtained in the absence of substrates. Native and trypsin-modified subunits (the latter having a mol. wt. of 24,500) have been maleylated, reduced, carboxymethylated, and subjected to exhaustive digestion by trypsin followed by peptide mapping. Comparison of the finger prints has shown that the trypsin-modified subunit represents a polypeptide with lowered content of dicarboxylic amino acids. The no. of peptides revealed after complete proteolysis of native and trypsin-modified subunits does not favor the presence of long repetitive sequences in each subunit and is at variance with some bacterial aminoacyl-tRNA synthetases. Study of the fluorescence polarization of 1-anilino-8-naphthalene sulfonate adsorbed on the dimeric tryptophanyl-tRNA synthetase, indicates that the mol. behaves as a complete entity in Brownian rotation. The trypsin-resistant end products, composed of 2 types of polypeptides (mol. wts. 24,500 and 14,000), remain assocd. with each other. From the mol. wt. of this assoc., it follows that each fragment is present in the assoc. in duplicate. When the purifn. procedure was carried out in the absence of a protease inhibitor, the active modified enzyme form was obtained. As judged from the mol. wt. values, it is composed of 2 equal subunits corresponding to one of the products of limited proteolysis. The data presented are compatible with compact 3-dimensional structure of tryptophanyl-tRNA synthetase having very limited regions exposed to exogenous or endogenous proteolysis.

L22 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
 AN 1981:79316 CAPLUS
 TI Structure of tryptophanyl-tRNA-synthetase and products of its limited proteolysis according to circular dichroism data
 AU Nurbekov, M. K.; Bolotina, I. A.; Lugauskas, V.; Favorova, O. O.
 SO Doklady Akademii Nauk SSSR (1980), 255(2), 482-6 [Biochem.]
 LA Russian
 AB The secondary and tertiary structures of the following were studied by CD: (1) native, dimeric tryptophanyl-tRNA synthetase (I) (subunit mol. wt. = 60,000), (2) the dimer composed of 40,000-mol-wt. subunits (E40) obtained from limited elastase digestion, and (3) the pseudodimer (E24+14, in which the 40,000-mol-wt. subunits are cleaved into 24,500- and 14,000-mol-wt. fragments which remain in an assocd. state). The structure of native I from which Zn was removed was also studied. The far-UV CD spectra of modified forms differed from that of native I. The relative proportions of amino acid residues in different types of structure (.alpha.-helix, .beta. chain, random coil) did not differ between native I, Zn-free I, and E40, whereas E24+14 showed a decreased proportion of residues in .alpha.-helix structure. The CD spectrum of E40 in the near-UV region did not differ significantly from native I, indicating that the removal of 20,000 daltons from the N-terminal portion of the chains does not affect the basic hydrophobic portion of the enzyme mol. in which arom. amino acids reside. The CD spectrum of E24+14 was initially similar to that of E40 but changed with time; the peaks gradually decreased and finally disappeared, indicating conformational destabilization of the subunits. For Zn-free I, CD peaks were almost fully absent, which suggests a role of the metal in maintaining the native conformation of the mol.

L22 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1980:36826 CAPLUS
TI Tryptophanyl-tRNA synthetase: limited hydrolysis by elastase and
preparation of a single-site form of the enzyme
AU Degtyarev, S. Kh.; Beresten, S. F.
SO Molekulyarnaya Biologiya (Moscow) (1979), 13(6), 1247-54
LA Russian
AB Each subunit of the dimeric tryptophanyl-tRNA synthetase from beef
pancreas was subjected to limited hydrolysis by elastase in 2 stages,
according to the scheme: 60,000 .fwdarw. 51,000 .fwdarw. 40,000 daltons.
In the course of the 2nd step, tryptophanyl-tRNA synthetase lost its
enzymic activity. In the presence of substrates, the pattern of
fragmentation did not change. Formation of tryptophanyladenylate-enzyme
complex decreased the rate of proteolysis. Using the ability of
synthetase to form 1 mol of stable aminoacyladenylate per mol of
synthetase, a one-site enzyme was obtained by action of elastase on the
aminoacyladenylate-enzyme complex. This one-site enzyme consisted of 2
subunits; one had a mol. wt. of 51,000 daltons and was active and the
other had a mol. wt. of 40,000 daltons and was inactive. The one-site
enzyme had Km values for all substrates for both aminoacylation and
ATP-pyrophosphate-32P exchange reactions which were similar to values of
Km for the native enzyme.